



Fact Sheet

US Army Engineer
Research and Development Center
Waterways Experiment Station

March 2000

Public Affairs Office Ž 3909 Halls Ferry Road Ž Vicksburg, MS 39180-6199 Ž (601) 634-2504 Ž <http://www.wes.army.mil>

C-17 Flight Test Support

Purpose: Support C-17 aircraft testing at six test sites by structurally characterizing each airfield and monitoring their performance under actual aircraft traffic.

Background: The C-17 Globemaster III aircraft was designed to operate on short semi-prepared airfields. The 1997 SPAM C-17 aircraft testing was designed to evaluate the aircraft's performance and develop criteria for designing, evaluating, maintaining, and constructing semi-prepared (compacted soil, aggregate, and stabilized) airfields for operation of the C-17 aircraft. The US Army Engineer Waterways Experiment Station (WES) was tasked to characterize each test site's pavement structure and to monitor the pavement's performance under actual aircraft testing. These tests included California Bearing Ratio (CBR) tests, Dynamic Cone Penetrometer (DCP) tests, rut depth measurements, cross section measurements, profile measurements, density testing, moisture content analysis, and soil classification. The analysis of the test resulted in the conclusion that the unsurfaced (compacted soil) airfields behave differently than traditional pavements. A model was developed for these airfields to predict the operational life of the pavement. Evaluation methods were identified that can be used to structurally characterize airfields.



Facts: The WES is fully equipped and staffed to perform detailed site investigations. The staff has extensive experience in advanced soils testing, pavement analysis, and pavement design. Additional areas of expertise include advanced modeling, mix design, nondestructive testing, dust mitigation, soil stabilization, and pavement materials characterization.

Point of Contact: For technical assistance regarding the structural field testing during C-17 aircraft operations, contact Mr. Jeb Tingle at (601) 634-2467 or e-mail at TingleJ1@wes.army.mil. General information on the WES is available on the web site at <http://www.wes.army.mil>.

